THE PASSPORT HOUSE LETTER

A Journal of Apple II Development • February, 1993

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Industry changes demand a shift in operation

EVERYTHING basic evolves. That slogan, designed to get you to buy jeans, also applies to business. Today's concepts, ideas and methods are soon made obsolete. To stay afloat, companies must restructure and adapt to change.

A change has taken place in the Apple II arena. Originally, in the days before Macintosh, and when the II was in its infancy, surrounded by abounding development and large amounts of money, there existed many publications. Besides several education magazines revolving around the Apple II, there were A+, SoftTalk, Nibble and InCider. One by one, the publishing giants that owned each were forced to sell them off and get out of the Apple II circle. Today, there is only a fraction of one major magazine left, and it is faltering. None of these were able to successfully deal with the change that hit the Apple II world.

A Leaner Operation

The Apple II resources that existed in 1984 are all but gone today. Tomorrow's fantastic Apple II developments are more likely to come from a group working from their basement than a large software corporation. This trimming of fat has spawned a new, leaner community, where keeping abreast of what is going on is more important. When developers can't afford to support the mass marketing techniques of yesteryear, a new way of getting the word out has to be designed.

The Passport House Letter was developed to provide access to information that is out of the frame of major magazines. To produce a large, glossy paged magazine requires a lead time of six months or more. How many independent developers can exist while waiting half a year for publicity? How long can the Apple II live as it becomes increasingly dependent on the small developer in that situation? With the ability to report on news as it happens, Passport House plans to become the leader in journalizing the Apple II.

There are other fine Apple II publications. Tom Weishaar prints several monthly newsletters, dealing with everything from how to exploit HyperStudio to how to operate the newly saved AppleWriter. Steven Disbrow's "GS+" covers the IIGS and provides programming information that encourages further development. SoftDisk also includes news in their disk full of programming each month. Our Letter certainly isn't an plot to take anything away from these; they've been performing their job well for years.

Our Role

With The Letter, we're seeking to fill the vacancy left by the disappearance of the old magazines that once provided general interest information on Apple II's in a monthly format. We're starting out with just our shoestrings and knowledge (and our Apple II's), but in the months ahead, you'll witness our evolution as we change into a developed voice in the Apple II world.

We'll bring you the news, show you through reviews what you can expect from available products, share with you the opinions of fellow users and bring you into the world of Apple II developers.

We ask you to do just three things for us: (1) Share with us what you're interested in; tell us what you'd like to see. (2) Show your support for our work by subscribing to our publication. And (3) advertise for us by telling your friends about us and making known to developers and companies that you read our publication.

Please join us in making The Letter a success. The Apple II world has changed. Get ready for the future with the Passport House Letter.

Interested in subscribing to the Passport House Letter?

Keep on top of what's going on in the Apple II world. In the pages of The Passport House Letter, you'll get a monthly journal of happening people, new development and information on how you can maximize your productivity. A full year of news is available for just $24 US. Sign up today! See additional subscription details on page two.

Interested in advertising in the Passport House Letter?

Knowledgeable Apple II users are reading the The Passport House Letter. Reach them with an effective yet inexpensive advertising plan. An attention getting full page in The Passport House Letter is just $399—you can't afford to miss out! For more information, write: Passport House Ad Dept., P.O. Box 145 Miles City, MT 59301-0145 USA.

QUESTIONS & COMMENTS

Dear Sirs,

It's nice to see that everyone hasn't given up on the II series. The ranks of supporters is dwindling. I read on NAUG's BBS that Zip is in Chapter 11 and no longer is supplying the Zip Chip for the IIe; that is a shame. I have one in my IIe and have been happy with it.

Roy Lohr
Lusk, WY

Roy, you can't always believe everything you read. We found the following information on Zip Technology in A2 News Digest, an news update compiled by Steve Weyhrich (ellipsis indicates our edit):

A somewhat startling report from the National AppleWorks User Group was posted in their category on the A2 RT [Apple II Roundtable] on GEnie in late December ... I decided to contact Zip myself and see exactly where things were at this time. On January 8, 1993, I called Zip and Ms. Hayes spoke to me. In our discussion, I found some major inaccuracies in the NAUG article. Ms. Hayes stated that she is Zip's CEO (not president), and that they have been in Chapter 11 for two years, and actually went out of it four months ago. That means that they are no longer in Chapter 11 at this time! (For those who don't know, a Chapter 11 declaration simply provides protection from creditors, while a company reorganizes itself to change its operations to a more profitable situation, and to be able to repay its debts. It is not the same as a company declaring bankruptcy and going out of business).

Secondly, and of similar importance, she said that Zip had indeed lost their previous manufacturer for the Zip 8 Chips, but they have located a new company for doing this work. It is not a trivial operation to create a Zip Chip, and it will take another four to eight weeks until they will be back at full production again; however, Zip Technologies will still be making the 8 MHz Zip Chip for 8-bit Apple II computers, as well as the Zip GS card for the Apple IIGS.

Now, it concerns me greatly that there could be such a discrepancy between what NAUG says it learned in talking to Ms. Hayes in December, and what I learned in talking with her on January 8th. ... The rumor that Zip was in Chapter 11 could easily have mutated into a rumor that they were out of business (and perhaps the rumor has gone that far by now). Press coverage like that can kill a company.

...If you were interested in a Zip accelerator for your Apple II, rest assured. For the time being, at least, Zip Technologies will stay in business and continuing producing products for both the 8 and 16 bit platforms. And it doesn't hurt to point out that if you want them to stay in business, it would be a good idea to plunk down some money and buy an accelerator from this company.

Zip Technology
5601 W. Slauson Avenue
Suite 190
Culver City, CA 90230

Phone: (310) 337-1313

Fax: (213) 337-9337

In addition, Roy, we'd like to make it clear that Passport House is certainly not part of a small minority supporting the Apple II. In addition to all of the developers we regularly report on, there are many groups that provide coverage in the Apple II circle.

Tom Weishaar publishes of several Apple II programmer-oriented monthly newsletters; SoftDisk, Inc. publishes two monthly disk magazines for Apple II users containing news and original programming; GS+ covers the IIGS with both a paper and disk magazine bimonthly; even mailorder giant Quality Computers has started up a bimonthly publication, II Alive, for Apple II's. We won't even attempt to list all of the Apple II user groups that publish information about the II. If there are that many people seeking to cover the Apple II, Roy, there must be a lot going on.

The Passport House Letter

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OUR OPINION The Issue: What kind of future does the Apple II have? If it's not yet dead, how much longer can it survive? Current news is not at all bad. Read our opinion and consider the facts.

The Future of the Apple II

The Apple II, as one of the first personal computer systems available, led the computer race for years. Today, however, the situation appears to have changed. The big glossy magazines no longer talk about—and scarcely even mention—the Apple II. Many schools, the foremost members of the Apple II community and single most contributors to its success, are opting to move into Macintosh territory. Will the Apple II soon become the Latin of the computer world?

Don't count on it. The Apple II is proving itself to be a very useful tool. The Apple II community is keeping itself quite healthy, even without Apple's life support. Apple II development seems to be at the highest peak in recent history, and there is little reason to think that the trend is temporary.

The Technology Race

Apple, IBM, Microsoft and other busting-at-the-seams computer industry leaders try to keep one hand in the present, milking current successes, while their other hand stays busy juggling through research and development, grasping for the next New Thing to propel them into the future. This type of scramble race assumes that consumers will buy up each new generation of hardware and software every few months. Businesses may be able to keep that kind of frenzied pace, but the typical person on the street simply can't.

What people want is a system that is powerful enough to accomplish useful tasks, simple enough to operate without a degree in computer science and expandable enough to weather time without becoming prematurely obsolete.

These are qualities the Apple II crowd have always seen in their machine. Especially so with the IIGS; its easy to use interface from the Mac and its expandability from the earlier II's made it a great machine.

The Stunted Growth of the II

The IIGS has not grown much since 1986, however. As a neglected baby, it has had to fend for itself most of its life. With Apple's charitable release of System 6.0 and HyperCard IIGS, the IIGS finally has the stuff it needed back in 1986, or even 1989, to make the Apple II a leader again.

Unfortunately, the IIGS's hardware is no longer in the running for top dog. Of course, even at its release, its graphics and speed weren't quite up to snuff with the already existing Atari ST and Commodore Amiga. Today, those systems have matured into major players. While their interface design can't compete with the IIGS, the graphics and power they possess blow the Apple II out of the water. They have evolved. The Apple II hasn't.

Time to Dump the II?

Should you switch to another system? First, consider the following. (1) Apple's graphic user interface, which they have given to both the Macintosh and the IIGS, is the best in the world. While Microsoft Windows, the Amiga, ST and others have tried to copy it, Apple's beats out all imitations. (2) The IIGS operating system, GS/OS, is a very well designed and easy to use system. Unlike Windows, it isn't merely a shell on top of a bizarre DOS from the dawn of computing. GS/OS is it's own system. And it is modular, so it can be easily modified or enhanced. Lots of third party companies are busy making small improvements in its operation. (3) Lots of people know the Apple II. Really well. As a platform, it is one of the best documented and one of the most understood by its users. Taking these facts into consideration, the only thing the Apple II community needs is an upgrade.

We can't expect one from Apple. Actually, it would be better not to get one from Apple. The next II from Apple would likely be artificially limited so as not to compete with the Mac. One couldn't expect too much in the way of innovative design. And with Apple's blatant neglect of the II in the past, could we expect that Apple would support a new II they might release?

Poised for a New Generation

The Apple II is ready for new generation from another source. And what kind of market could be better? The Apple II has an active community and loyal buyers. It has a high quality interface and operating system, already paid for by Apple with its millions of research and design dollars. All we need is a new machine to hit the ground running.

The hardest thing about releasing a new system is its infancy of slow support. By borrowing the legacy of development of the Apple II, a next generation system could employ the latest technology right now, easily beating other personal computer systems to the multimedia punch. And with open-ended expansion in the Apple II tradition, the system would capture everyone's attention. The idea is not out in left field. Read about BurgerBill's Avatar in Industry People.

The Apple II is poised for growth, yet the growth won't be static. A next generation GS/OS system, with true photorealistic graphics and fast operation, wouldn't be bringing VisiCalc back into vogue. It's unlikely it would even be referred to as an Apple II. Yet having a powerful system in our own community would certainly bring back the II's illustrious days of youth. And that should make every one happier in Apple II City, even the already satisfied users in the suburban AppleWorks territories.

Count on us to continue reporting on the current Apple II world, as well as looking ahead to spy out new areas of development. We're interested in the future of the Apple II, and believe that it has a great potential. As Apple II users ourselves, we can keep you accurately up to date on what's happening and show you what you can expect for the future.

The Forum

Speak out! Tell us what you think. We'll print your responses.

After reading Industry People, we'd like to know what you think about BurgerBill's Avatar. Think about specific features you'd like to see. What software would sell the machine?

Think hard and long and then write us at our regular address. We'll print responses and then compile the best ideas and forward them to the Avatar production team.

PRODUCT TEST DRIVES

Most everyone has heard about Out Of This World. What's the big deal? We bought a copy and played it to death. Here's our report.

"Out Of This World"

Interplay Productions
3710 S. Susan, Suite 100
Santa Ana, CA 92704
(714) 549-2411

Street Price $49
Requires: System 5.0.4
Hard disk and accelerator card both highly recommended

Out Of This World drops you into a Another Place where you fight your way through uncharted territory. Originally designed by Eric Chahi, the IIGS version was programmed by Bill Heineman.

Heineman's efforts in OOTW show that the IIGS is capable of performing a good game, despite the fact that Apple has never provided much support for game development.

The Game

Out Of This World starts out by telling your story with a cinematic, animated opening. For the rest of the game, you are Lester Knight Chaykin, a boyish looking scientist with a bright red coiffure doing research with particle acceleration.

Your experiment goes wrong, sending bolts through the walls of your building that causes minor rumbling. The situation escalates into the disappearance of you, your desk and a large chunk of floor below you into a flashy display of red and blue lightning. You then reappear in The Other World and start trying to make sense of where you are and what you have to do.

You learn by dieing. If you can figure out how to get past the deadly creatures in your path and make it through the first level, you are rewarded with a short animation that leads you into level two. Each time you loose a life, you are presented with the code of the level you are on, so next time you start up the game, you can enter in your code and start where you were last.

Getting through a level can get plain irritating for anyone who's not an avid video game player. OOTW does takes some getting used to, as it combines the plot and characters of an adventure game with the fast maneuvering of arcade. Each level requires you to figure out what to do, then stick with your plan until you can hit your keys or twist your joystick with just the right timing to accomplish your plan. Our team managed to figure out how to get past the first level right away, but we couldn't actually make it through for some time. Mastering your controls is a major part of the game.

After the first level, the next few come fast enough to keep you trying. Watch for details along the way of how things work. You must also master the gun you eventually find. The instruction booklet explains how it works, but actually working the thing—and getting it to do what you want—takes some experience.

Game play is fast and interesting enough even to keep a non-gamer entertained. If you aren't a big game player, OOTW's sweeping cinematography and clever use of sound effects may keep you returning to run around in this Other Place.

Sacrifices for Speed

The IIGS has an exceptionally slow graphics system that perpetually plods along at the 1 MHz timing of the original Apple II. However, Heineman has performed some great tricks to get the IIGS to play OOTW at a acceptable pace. In addition, the IIGS version provides users four display options for even better speed.

For game play at full screen (called "16 mm") and letterboxed ("35 mm") displays, you'll need an accelerator—or the patience of a saint. If you are still running at 2.8 MHz, get thee on thy phone and buy yourself a speed card. Your life will be better for it.

The half screen, full width "70 mm" display is too distorted for our liking to even play on. "Television" mode, however, although it displays the action of the game in a tiny quarter-size area centered in the middle of the screen, dramatic increases speed enough to make the squinting it requires worth it. Even if you are using a standard 7 Mhz accelerator card, you may get used to playing in this speedy—yet tiny—display mode and stick with it.

Turning off the music soundtrack will also speed up the game a bit, and may be necessary if you get stuck on a level for any time. A few levels are accompanied by music so monotonously dreary you may opt for shutting down the sound purely for sanity's sake.

Development

How is it that Interplay, OOTW's publisher, produced the game for the IIGS? Bill Heineman told Passport House in an interview that he approached Interplay about doing a version of the game for the 65816, the microprocessor used in the IIGS and the Super Nintendo (SNES). Heineman said he completed code for the game on the IIGS using QuickDraw II (the internal graphic routines built into IIGS ROM), "just to prove it could be done on the '816."

OOTW uses geometric shape rendering to perform its screen animation, similar to the vector graphics of a flight simulator. QuickDraw isn't quick enough to do the game's graphics at a playable speed. So Heineman rewrote the game in low level 65816 code on the SNES and then modified it to operate on the IIGS.

Heineman said that the IIGS version is basically the same as the SNES version. More sounds are included for the IIGS version, as it comes on two 800 K disks rather than a 1 megabyte SNES cartridge, but that also results in frequent disk-swapping unless you have a second drive.

Interplay's games go through careful quality control and testing, so the expense of producing a game requires guaranteed marketability. The IIGS market is such an uncertain sell to most commercial companies that, Heineman said, Interplay would agree to spend for IIGS development only if they could get a guaranteed buyer. Big Red Computer Club, which already deserves credit for saving a large number of Apple II commercial titles, agreed to buy a thousand copies of the game in advance. Interplay then developed the game and supplied it to Big Red.

We can expect that further development for the Apple II will be available as long as there are users to put their money where their wish list is.

Recommendations

Still, don't rush out and buy a copy of the game for the sake of Apple II community. The IIGS may not be a great pick for a game machine, but Heineman's OOTW provides IIGS users with an impressively good game to play between sessions of serious stuff.

We give Out Of This World our Passport House First Class Recommendation as a great game on its own merit (to anyone willing to shell out the fifty bucks—get an accelerator and hard drive first, you'll need them anyway).

Information: Passport House Product Test Drives

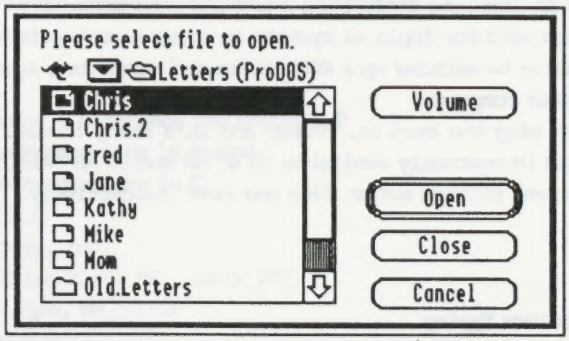
If you would like to see a specific product appear in our Product Test Drives, write us at our regular address. Often, we will review products in a group to provide practical information about how well they work together, or head-to-head to highlight the advantages and drawbacks of each.

MAXIMUM OVERDRIVE Hardware isn't the only road to better performance. In the next issues, we'll examine ways you can speed up your work using software.

Folder Hopping with Kangaroo

In this issue, we examine a system extension from Seven Hills Software called Kangaroo. Because GS/OS is so structured and consistent, adding an extension to system software can dynamically upgrade the abilities and usefulness of every program you run.

Kangaroo performs a variety of functions, so it's a little difficult to pin down exactly what it is. Think of it as a third-party system software upgrade. It installs itself as a permanent initialization file, or Init, so when you startup your system, it plugs itself into the system and becomes part of the GS/OS look and feel. Every time a program directs the system to display a 'StandardFile' selector, such as when opening or saving a file, the Kangaroo Init adds a small Kangaroo icon to the left of the drop down folder/volume menu above the scroll box.



A GS/OS "StandardFile" with the addition of Kangaroo. When the Kangaroo icon is selected, it presents a menu of functions.

Hierarchal Hopping

Click on the small icon and you enter the hierarchical world of Kangaroo. Brainstorm Software and Seven Hills designed Kangaroo to operate intuitively. In their design, hierarchic menuing was borrowed from the Macintosh. As you select certain menu choices, sub-menus pop up to display additional selections, with some sub-menu selections leading to other sub-menus. GS/OS doesn't provide built-in support for hierarchal menus, so the Kangaroo package includes a separate Init, Hierarchic, that adds the function system wide. Other applications, Control Panel devices and Desk Accessories can use the Hierarchic Init included with Kangaroo to create hierarchal menus of their own.

Hierarchal menus are useful, in that they provide users with a large and dynamic selection of choices to make. And Kangaroo exploits the possibilities by adding a lot of choices. In all, Kangaroo does two basic things to speed up your work: it lets you hop from place to place within the jungle of your volumes and folders, and it consolidates a variety of useful utilities in one place.

The Hopping Thing

It's name, of course, comes from the ability to bounce you from the folder you are currently looking at in a StandardFile into any other folder. When opening, saving or deleting documents, having Kangaroo saves you from having to locate each file manually using the open and close commands. This will make a lot of sense only after you have spent a great deal of time manually searching your disks for hiding files.

The first three selections of the Kangaroo menu are Folders, Files and Volumes. As you work, Kangaroo keeps track of what files you have been working on and where they are. When you open a file, it remembers the file and the folder it is in.

Then, when you next highlight Files in the Kangaroo menu, a pop up sub-menu appears that displays the file along with others you have currently worked with. Choosing one of these causes the StandardFile to display the folder of the file you chose. Selecting from the Volume or Folder menus performs a similar hop.

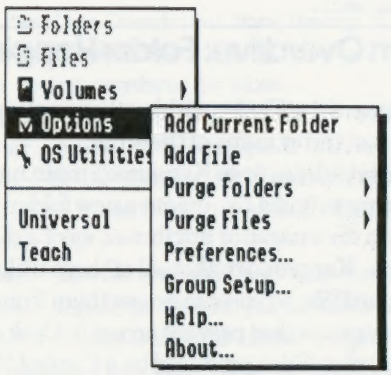
We've personally longed for the ability to quickly maneuver through the labyrinth of folders on our hard drives and stacks of floppies. Kangaroo makes folder jumps simple and intuitive.

It also spruces up the plain GS/OS StandardFile dialog. It automatically applies colors to the file and folder names and shadows their icons. Kangaroo can also add, if there is about an inch of room at the bottom of the StandardFile, a listing of the file type, size in bytes, and creation and modification dates of the currently selected file.

As your personal StandardFile valet, it allows you to customize the way it works. For example, you can turn off functions you don't want. You can permanently add files to the lists it displays and delete files or folders you don't want it to display.

Kangaroo can also be set to add an additional "Open..." menu selection in red under the standard "Open..." menu choice in the File menu. When highlighted, it produces a sub-menu listing the files from the File menu in Kangaroo. Select one of these and Kangaroo opens the file, skipping the StandardFile all together.

This 'automatic open' option also watches for other menu choices that open a StandardFile. When it detects one, it throws in a red clone of the menu selection. Like the red "Open..." described above, when selected, the red clone displays Kangaroo's File listing in a sub-menu. Kangaroo cloned a red "Launch..." selection in our System 6.0 Launcher and new "Open Template...", "Import File..." and "Delete File..." clone selections in AppleWorks GS.



One of Kangaroo's hierarchic menus, as depicted in the manual.

By giving you a wide selection of choices, Kangaroo accelerates the way you work with saving and opening files. Yet it also performs a variety of system utilities as well.

A Utility Haven

If you have a hard disk, you likely make use of the luxury of a large startup volume by filling it with Desk Accessories that let you

LATE NEWS & NEW PRODUCTS

New Products:

CV-RAM
CV Technologies
9431 Saddlebrook Lane, Suite 2C
Dayton, OH 45440
(513) 453-5743

CV-RAM for the IIGS comes stock with 4 MB and offers expansion in 1 MB increments to 8 MB. Using proprietary technology, the high density RAM card provides DMA compatibility up to the full 8 MB (DMA usually limited to 4 MB on the IIGS).

It is currently available from TMS Peripherals (1-800-ASK-4TMS). The 4 MB CV-RAM board is priced at $189.95, and each additional MB of RAM is a $30 upgrade.

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AE Floptical Drive
Applied Engineering
3201 Beltline Road, Suite 154
Dallas, TX 75234
(214) 241-6060

Floptical drives use laser tracking to provide precision movement of read and write heads allowing for ultra high density storage on special 3.5" floppy disks. The 21 MB disks don't have the speed of a hard drive, and are still susceptible to magnetic damage like standard floppies; however, two 21 MB flopticals can back up an entire 40 MB drive, making the floptical drive useful for backups, archives and large volume data sharing. In addition, this SCSI device can read and write high density 1.44 MB floppies without need for Apple's FDHD "Superdrive" interface. When Apple releases the MS-DOS FST, the drive will, under GS/OS, read and write 720 K and 1.44 MB MS-DOS disks as well.

The AE floptical drive is available exclusively through IF Computer Sales (1-800-ASK-4LRO) at $469, which includes one Floptical disk and a special driver for the RAMfast SCSI card; it works with the Apple High Speed SCSI card as well.

The drive may be just what you're looking for, as it combines the features of Apple's high density FDHD disk drive with a modestly large-format, removable drive.

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IDE Hard Drive
Parsons Engineering
7734 South Broadway
Wittier, CA 90606-2304
(818) 966-5538

Parsons Engineering introduced a new IDE hard drive on a expansion card for Apple II systems to offer a cost-effective alternative to setting up a SCSI chain and saves desk space around your computer.

Just plug the card in, format and it's ready to use. The hard card is currently available in 40 MB and 80 MB versions, with current pricing set at $399 and $499, respectively.

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Mario Teaches Typing
Interplay Productions
3710 South Susan, Suite 100
Santa Ana, CA 92704
(714) 549-2411

Bill Heineman has completed work on this typing tutor especially for kids featuring the most famous Italian known to the Nintendo set. The IIGS version of the instructional program is soon to be released by Interplay. An IBM version already

"Maximum Overdrive: Folder Hopping with Kangaroo" continues

perform functions of the Finder within other applications. With Kangaroo, you can throw many of these out.

Selecting OS Utilities from Kangaroo's main menu opens up a sub-menu offering to find a file, create a new folder, delete files or folders, change a file's name or attributes, eject a disk and erase or format a volume. Kangaroo makes all of these utilities available from any StandardFile, so you can access them from any application—even ones that prevent access to Desk Accessories—as well as from StandardFiles produced by a Control Panel or Desk Accessory.

Don't conclude that Kangaroo's integrated set of online utilities are bare or simple. The Find File selection, for example, lets you perform searches for files based on name or parts of the name, file size, file type and aux type, creation or modification date and whether or not it has a resource fork. Unlike even Apple's Find File DA included with System 6.0, Kangaroo's file finder lets you search all volumes online at once.

In addition, when opening a file, it allows you to filter through files and find all those that can be opened by the application you are currently using. You could search through a list of files from a paint program and filter out just the paint files it can open.

After finding the file or files that fit your search criteria, you can choose between opening one of them directly or setting the StandardFile to its location.

The Bottom Line

Software enhancements can, in some cases, do more to boost your productivity that adding new hardware. No system accelerator can speed up your ability to search out a folder like Kangaroo.

In addition, installing Kangaroo in your system may well make you want to dump out some of the Desk Accessories you've been harboring, freeing up disk space and memory.

Kangaroo is a model of integration and good design. Many new products for the IIGS similarly add system wide functionality that increase your productivity no matter what application you're using by performing boring tasks for you or giving you shortcuts to get your work done faster.

exists, so curious Mario fans can hike over to Egghead and check out the details there.

Turbo IDE Card
SSH Systeme
Schönstraße 80a
8000 München 90, GERMANY

SSH Systeme's high speed DMA controller for Applied Engineering's internal Vulcan hard drives promises significant speed increases. A press release stated that the controller card was is compatible with all Vulcans, even " more compatible with IDE drives than the original Vulcan controller. "

The card is supplied with a low level drive formatting utility that changes the 7:1 to 5:1 interleave of the original to a direct 1:1 read, resulting in up to 500 K per second, 1 ms per block reads. The release did not mention compatibility with non-Vulcan IDE drives. Contact the developer for additional information. No phone number was available.

Programmer's Reference for System 6.0
Toolbox Programming in Pascal
Toolbox Programming in C
ORCA/C 2.0
Byte Works, Inc.
4700 Irving Blvd. NW, Suite 207
Albuquerque, NM 87114
(505) 898-8183

Programmer's Reference for System 6.0 is a necessary part of any IIGS developer's library, and a welcome addition to anyone wanting to better understand the new System 6.0. The manual covers changes in the toolbox, including data on new controls; the Media Control, MIDISynth and Video Overlay ToolSets; new File System Translators supplied with System 6.0 and the new features of Finder 6.0.

Toolbox programming in Pascal and Toolbox programming in C detail updated information for using the two languages with the IIGS toolbox. ORCA/C 2.0 is a new upgrade to the ByteWork's implementation of the C programming language.

Other Notes:

·JEM Software's UltraMacros 4 has been sold to mail order house Quality Computers and will be a Quality-labelled product from now on. For more information on UltraMacros, contact Quality Computers at 1-800-777-3642

·Roger Wagner Publishing has announced the first annual HyperStudio Festival, to be held in San Diego, July 8-10, 1993. In a press release dated January 10, Roger Wagner Publishing promised the Festival will be "the ultimate computer user experience, celebrating the many applications of HyperStudio in both home and school."

The release continued, "At the HyperStudio Festival, attendees will have an opportunity for in-depth exploration of multimedia hardware options such as scanners, video digitizers, laserdisc players, still video cameras, MIDI instruments, VCRs, etc., and enjoy family fun activities at the Festival and in San Diego! Special 'family rates' are planned to encourage families to involve everyone in the Festival"

Roger Wagner himself was quoted as saying, "We believe that using HyperStudio is both empowering and fun, and we are working to make this one of the most enjoyable and practical conferences you'll ever attend."

The event is described as being "a combination of hands-on workshops with both the Apple IIGS and new Macintosh versions of HyperStudio, and hourly conference sessions on how to get the most out of multimedia and your computer." For more information, contact:

Roger Wagner Publishing, Inc.
1050 Pioneer Way, Suite P
El Cajon, CA 92020
(800) 421-6526

·"Late News & New Products" reports on everything we can dig up about companies and independent developers. If you'd like to announce a new product release, update or other event, send us the information detailed below, and we'll include it in our monthly report.

New products or updates: full product name; developer name, address and phone; system requirements; compatibility data; special features or improvements.

Other announcements: names of persons or groups we can contact for additional information; a brief explanation of the event; the time, location, date and people involved.

Keep in mind that the more information you provide, the better we can inform our readers. To be in our March issue, you must respond before February 10. Send information to: Passport House News Dept., Box 145, Miles City, MT 59301-0145

Correction:

In last month's "Maximum Overdrive: More Memory for Performance", we recommended setting up your extra memory as GS/OS cache , up to one megabyte in size.

Considering that most users with a lot of memory also have a hard drive, that advice isn't very good. According to CV Technology , makers of the RAMfast SCSI controller, a fast hard drive can actually be slowed down by a large GS/OS cache. Their explanation:

"Floppies will improve somewhat but your hard drive partitions and your normal processor performance will not improve. I would not create a GS/OS cache larger than about 32 K or 64 K. The overhead of GS/OS cache is pretty ugly and it increases linearly with the size of the cache. It should make sense; GS/OS uses a linear search algorithm for cache lookup which is about the most inefficient search algorithm known to man (ug). That is one of the reasons we don't use GS/OS cache. If you setup a 256 K cache in GS/OS, the lookup time is larger than our read time."

Setting the GS/OS cache to 0 doesn't shut it off; it always uses at least 16 K. Just don't set it too high.

INDUSTRY PEOPLE — Apple's not going to make the next Apple II, so Bill Heineman and the team at Parsons Engineering is taking on the job themselves.

William "BurgerBill" Heineman

Bill Heineman is a familiar name in the Apple II community. He's compiled a long list of accomplishments and still continues to do exciting stuff with the II. One of his recent accomplishments is Out Of This World, a new game for the IIGS using polygonal graphic rendering.

With his publicly available "Bill the Cat" desk accessory and "Bottles of Beer" program—it sings with a synthesized voice the "100 Bottles Of Beer" song—he's proven his mastery of using resources with the new IIGS System 6.0.

Heineman's in depth knowledge of IIGS hardware and system software allowed him to write the Harmonie package of printer drivers. Harmonie allows GS/OS users to print with new options to a variety of low cost, high quality printers.

Heineman has taken his experience in working with the 65816 microprocessor in the IIGS to the Super Nintendo, which also uses the 65816. And he's brought back stuff as well. As noted in the OOTW review on page four, the IIGS version of the game was ported back from the SNES.

Good video games require interesting graphics, engaging sound and quick responses. Programming on the IIGS, which is not built like a game machine, requires in-depth knowledge of the hardware to accomplish programming tricks.

Heineman's knowledge of the IIGS is impressive. But he's not stopping there. Apple has chosen not to build another generation of Apple II, so Heineman, along with Steve Parsons and a small group of programers and hardware designers, it taking on the task.

The Next Generation Apple II

Although work on the new system is progressing, the progress comes hard. To do things right takes time. Patents are being filed, internal programming must be rewritten to allow current software to take advantage of new hardware, and so on. Heineman wants people to know about the project—everything he can tell—but has little time free to go around talking about it.

Fortunately, he did have the time to grant Passport House an interview. What we can tell you about the system, we will. And we'd like to offer some of our own ideas as to what the new system could mean for current Apple II users.

Avatar

Heineman named the system after Avatar, the hero character of the adventure game Ultima I. Heineman's involvement with video games goes further than the name of his system, however. Video game systems are built for performance. Heineman has taken what he knows about arcade systems and applied them in Avatar to build a very fast system.

For example, one of the main differences between the IIGS and the SNES is the graphics system. The IIGS uses a bank in RAM to store the information the graphics display hardware uses to draw the screen. Changing information in this area is done directly by the central processor and must always be done at the IIGS's slower 1 MHz speed. That drastically limits the ability of the IIGS to do very fast graphics.

The SNES, on the other hand, removes the task of controlling the graphics screen from the central microprocessor and hands it to a separate subsystem. The central 65816 can then do its regular tasks without the additional burden of drawing graphics.

The Avatar team at Parsons Engineering has designed into the new system a separate graphics controller from Texas Instruments, the 34010, that does the system's graphics. TI built the general purpose graphics chip to be fast, so on the Avatar, graphics will be mind blowing. The chip features screen drawing at a blazing pixel per cycle (the chip runs at millions of cycles per second) and includes powerful built-in functions, like "draw icon," to make programing easier and faster.

Current IIGS applications can take advantage of the new graphics hardware without modification. Apple designed the IIGS to allow for expansion. Applications talk to the system software, which in turn, talks to the hardware itself. When hardware changes, the system software is modified to talk to the new hardware so that current applications will still work. Since Apple is no longer interested in expanding on the IIGS, Heineman's group is doing the task.

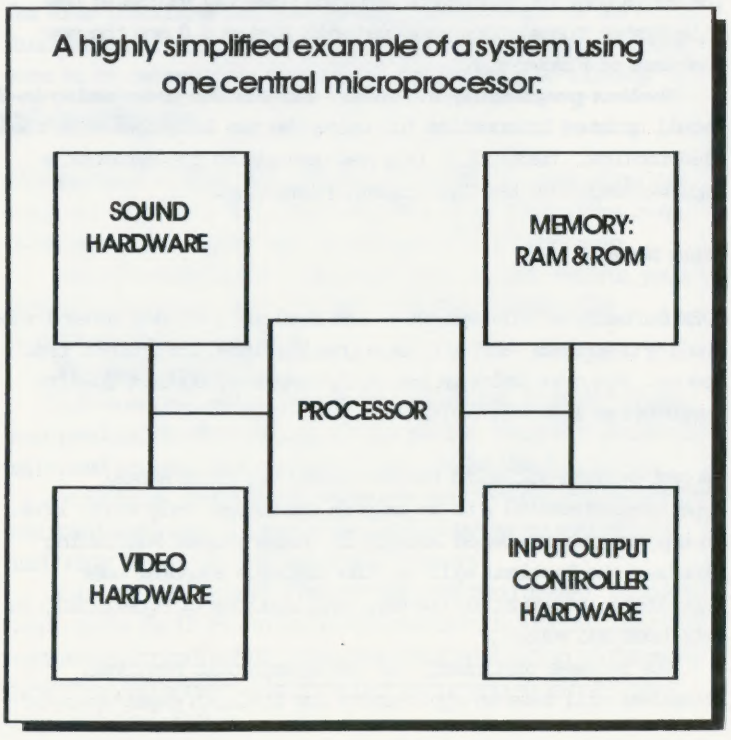
After buying an Avatar, you have to license a copy of GS/OS from Apple, much the same way IBM clones must license copies of MS-DOS. The Avatar would add extensions to the copy of GS/OS you install. The extended GS/OS would run the same programs you already have using the new hardware.

Parallel Architecture

But new graphics and faster operation aren't the only new things about the Avatar. The new system will feature parallel processing.

Generally, computer systems are based on a single central processor. The IIGS is based around a 65816 from Western Design Center. MS-DOS or OS/2 computers are based on a family of microprocessors from Intel, know as the 80x86. Each number in the 'x' place indicates a new generation. The 80486 (commonly abbreviated as '486') is currently the fastest, although Intel is releasing a 586 generation they call 'Pentium' (to get away from

A highly simplified example of a system using one central microprocessor.



the numbers, no doubt). Similarly, the Macintosh is based on microprocessors from Motorolla, the 680x0's. The Quandra, Apple's fastest Mac, is based on the 68040. Motorolla is skipping generation five; their next chip will be the 68060.

So what do all these numbers mean? Every few months, Intel and Motorolla introduce a new generation of microprocessor. Not only can computer manufacturers barely keep up with this constant upgrading, software that really uses the new chips is slow in coming. New generations are not being fully exploited before they are considered obsolete.

The 65816 inside the IIGS is not considered a powerful microprocessor. Yet the IIGS can perform a lot of useful things. It's doing an amazing job of keeping up in this era of throwaway technology.

The situation is similar to something that happened years ago. The United States was building new and more powerful computer systems. The Soviet Union fell behind in cutting edge computer systems, because they lacked the know-how and resources to build processors with the power of the new American designs, and they couldn't buy American systems. So they employed the concept of parallelarchitecture.

In a parallel design, several processors work together to solve a problem, rather than having one main, very powerful processor doing all of the work itself.

Heineman's Avatar includes a parallel processor bus structure that allows a user to basically "plug in" new microprocessors. The system distributes tasks to each processor. This type of design would bring several new things to the end user.

Parallel Design Feature #1

The first is a price break. Intel and Motorolla know everyone wants their chips. So they can charge hundreds of dollars for their technology. In our interview, Heineman indicated that around a third of the price of the cheap IBM clones comes from their use of snooty processors. (That's the whole reason behind Intel's multimillion dollar "Intel Inside" campaign. They want you to think that there's something special about their microprocessors that you can't get from Cyrix or AMD—two manufacturers of Intel work alike microprocessors).

The Western Design Center 65816, which is not a big market chip, can be had for several bucks. Like the old Soviets, the Avatar can boost up speed and functionality by adding a bunch of 65816's that team together to share tasks.

Parallel Design Feature #2

The second new thing a parallel design brings to end users is true multitasking. Microsoft Windows for the IBM crowd and Apple's MultiFinder for the Macintosh allow the operation of several programs at once. But they don't really provide true multitasking.

What they do is switch between programs very quickly, performing tasks from each one after the other, in an environment that makes it appear that several programs are doing different functions concurrently.

The IIGS already has this type of multitasking operation with Procyon's new GNO/ME extension to GS/OS that allows for several applications to be in memory at once, each sending tasks to the central processor.

True multitasking requires additional processors. Parallel architecture would allow one microprocessor to be running one program, while at the same time the processor next to it is performing the instructions of another program. True multitasking doesn't slow down the system, it merely exploits other microprocessors available in the system.

When you stop to compare this true multitasking ability with Parallel Design Feature #1 above, you'll find that the Avatar will have a great deal of power—outrunning many of today's state of the art designs. Yet because the handful of 65816's in uses can be had for the price of a single, paying-for-extreme-technology-increases Intel chip, the Avatar can offer the power at a very low cost.

Parallel Design Feature #3

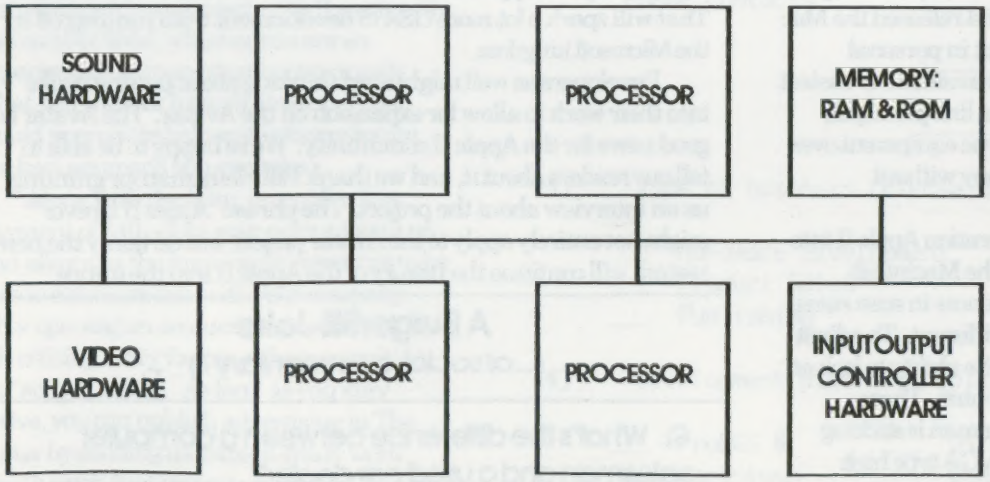
But wait, parallel processing brings a third major new ability to the home user. Heineman's design allows for a wide variety of microprocessors to be included in the parallel processor bus. He suggested that the Avatar may be sold with an Intel 386 and Motorolla 68030, providing the ability to run Windows and Macintosh code in GS/OS windows at the same time as IIGS software. The bus is designed to be flexible enough to allow for high speed RISC based microprocessors, as well, such as the ACORN RISC and the Motorolla 88000 RISC.

RISC stands for Reduced Instruction Set Computing; it is a new concept in processor design that basically employs the idea that processors are better at screaming through lots of extremely simple instructions than at banging out fewer, more sophisticated tasks. RISC processors are used in the new high performance laser printers.

Conceivably, with a RISC processor in the bus, the Avatar could do complex Postscript rendering internally for a cheap brainless printer while you work on something else.

Adding up these three main advantages of parallel architecture brings us to a fascinating conclusion: the Avatar could bring monstrous computing power with cross-platform abilities to regular users at a great price. What a great way to carry on the tradition of the Apple II.

A similarly simplified example of a system using several microprocessors in parallel:



While only four are depicted here, the Avatar is designed to accomidate a lot more. Heineman said there's a practical limit of 256 and theoretical limit of 32,000!

The Users

Who is Heineman aiming the Avatar at? The same buyer that has kept the Apple II alive for so long: schools, libraries, home users, small businesses. We find it difficult to believe that bigger companies wouldn't be interested in the Avatar as well, but Heineman indicated that one design consideration of the system was price; making the technology available to regular people.

Additional Design Features

Because the Avatar is still very much deep in development, it would be foolish to publicize features that may change or be dropped. Heineman said in the interview that many features currently need to be kept in confidence until patents are obtained. There are features and abilities that have been made public by the team, and we would like to repeat these here for our reader's benefit.

One major design idea is that of sharing peripherals with the widely available and cheaply obtainable IBM clones. For example, the Avatar features IBM AT type 16 bit expansion slots. These are significantly different than the Apple II type slots, so your old cards won't fit. But most of your cards perform features the Avatar replaces anyway. Just as an example, the accelerator card you may have in your IIGS will be useless in an Avatar. The base speed for a 65816 in the Avatar is 10 MHz. Additionally, unlike the slow architecture of the IIGS, in the Avatar, there are no speed bottlenecks to work around.

In addition, Heineman's system will dispense with the Apple Desktop Bus in favor of standard IBM serial keyboards and mice. Being a fan of ADB, our interviewer questioned Heineman about the loss of Apple's ADB setup.

Heineman replied that IBM mice and other pointer devices, such as trackballs and touch screens, can perform just as well as their ADB counterparts, but at a much lower cost.

Heineman continued with a deflation of Apple's concept of their being better at everything. He gave as an example their GCR system for 3.5" floppies. Apple uses a more expensive GCR format system in their 3.5" drives. When reading IBM disks, the Mac translates the MFM coded IBM disks to GCR. MFM technology is cheaper. Apple has even started using MFM coding in their high density drives. Heineman then explained that by using MFM drives, like IBM and compatibles, he can save buyers money. When reading original Apple disks, the Avatar can do a conversion from MFM to GCR similar to the opposite task performed in the Mac.

In all fairness, let us point out that Apple didn't start using GCR because it's more expensive. When they first released the Mac in 1984, its 400 K, 3.5" floppy was a new concept in personal computers. GCR drives were likely all that was available or easiest for Apple to use or get in those days. The bottom line principal, however, is that using industry standard IBM type equipment over Apple stuff can, in many cases, save a lot of money without sacrificing any quality.

Another example of extending his next generation Apple II into IBM territory, rather than following the lead of the Macintosh, involves display monitors. Because of the differences in scan rates, the type of monitor used by Macs and IBMs is different. To adjust for either type of display, a monitor must have the ability to lock on and adjust to the signal sent to it from the computer. These multiscan monitors are very expensive. So Heineman is sticking with the inexpensive and widely available IBM VGA type high resolution monitors. This will provide users with a wide selection of prices and qualities to choose from to fit their budget.

In addition, the Avatar will continue the tradition of the Apple II's option of composite NTSC output. This allows users to display graphics on standard televisions and record anything on the screen with a VCR without having to buy additional converters. Heineman said that the ability to record students' presentations on a standard VCR is very important to schools. Apple has never built this simple ability into the Macintosh.

And speaking of graphics, the Avatar will, thanks to the TI graphic chip, provide wizbang graphics at resolutions of up to 1024 x 768. The 34010 can do up to 24 bit color, as well, although Heineman has publicly stated before that the Avatar will likely have 8-bit color (256 colors).

Thanks to the proliferation of Microsoft Window clones, monitors to display these super high resolutions are now affordable. The speed of the display would finally allow for the kind of multimedia—with large screen real time video—that everyone else finds so hard to deliver.

Back to Reality—Our Opinion

A great deal of vaporware has presented itself for the Apple II in the last several years. There isn't enough money in the Apple II arena to make a lot of ideas into a realities. But Heineman's Avatar project is different in its approach. First, Heineman himself is a something of a wonderworker. He knows what he has to do to get it done and has realistic ideas of how to do it. And the Avatar team has a practical market in mind.

If Heineman can get Avatar details to developers by this KansasFest, and have it available by next Christmas, we can expect the Avatar to be big news, something along the lines of the VideoToaster. To be able to do that, Heineman and his team will have to be able to work uninhibited. We would suggest readers not write letters or make phone calls to the team about the project until some sort of information center is set up. They can't handle that themselves.

We expect Heineman's team will contact the Apple II community with details and further information when they are available. Until then, we think that the best thing Apple II people can do is keep the project in the back of their minds and continue supporting the GS/OS community. Remember, the Avatar is a GS/OS machine.

Stay with the Apple II community. A very powerful machine is in the works and coming soon. The IIGS already does a lot; the Avatar will do a lot more. Don't run out and get a 386, 486, or whatever because you think you need something more powerful. Build onto your Apple II. Spend for a SCSI hard drive or CD ROM. That will spark a lot more GS/OS development than running off to the Microsoft kingdom.

Developers as well might start thinking about putting hooks into their work to allow for expansion on the Avatar. The Avatar is good news for the Apple II community. We're happy to be able to tell our readers about it, and we thank Bill Heineman for granting us an interview about the project. The phrase "Apple II forever" might not entirely apply to the Avatar project, but certainly the new system will continue the history of the Apple II into the future.

A BurgerBill Joke
(...or social commentary?)

Q. What's the difference between a computer salesman and a used car dealer?

A. The car dealer knows he's lying.

PASSPORT HOUSE REPORT

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Clip or photocopy

ERAN PAIGE — Eran's got games on the brain. Is there potential for new games that teach hardware basics like SCSI protocol and accelerator installation?

The Game

Being able to sneak a few tries of my own on our office copy of Out Of This World started me thinking about the usefulness of video games. While the IIGS is not a game machine of choice—it's better at more serious things—It does appear to me that a game could foster more development in the Apple II arena. Let me explain.

Remember the movie Tron, from 1984? It was a real flop made by Disney where a video game programmer gets sucked into a mainframe with an attitude problem. Tron, the hero programmer, battles his way through the innerworld of the computer, a giant analogy of computers and society. The film was one of the stupidest Disney ever put out. It later spawned a video game of the same name, where the player, as Tron, fought his way through four different arcade-type shoot 'em up games. It movie also spawned several video games on the home game systems of the day, like the old Atari 2600 and Intelevision.

The idea I'm gleaning from that whole mess is that of a game where you are placed inside the computer. Rather than trying to extend some sort of analogy or create excitement about a really dumb movie, the game would be designed to teach the internal hardware and functioning of the Apple II.

A lot a people would like to learn how to program, but learning the nuts and bolts of even a high level language like C or Pascal seems to many a daunting task. Put the would-be programmer inside the Apple II in a plot to destroy a virus instead. Make the environment closer to real than a game. By working out ways of getting the desired result by applying a programmer's tools and tricks, the player would teach himself how the system operates.

The game could drop one into a variety of scenarios. Imagine a low level, command line interfaced plot to send a "help me, I'm stuck in the computer" message to the printer via the serial port hardware. Or how about a high level graphic adventure as a GS/OS virus scanner trying to eradicate a mutating virus and patch up the damage it has caused?

Video games have often reflected the lives of their programmers. Remember the game Qix? The game originally described the lightning bolt enemy Qix as a virus, and your job was to encase it into the smallest region possible, freeing the mainframe from the menacing terror.

Of course, Qix didn't exactly teach much about computers. In fact, it mystified their insides, as did the movie Tron. Yet a well designed game could teach real computer principles and encourage people to look into taking a crack at programming.

Schools will often put kids in front of mind games—SimCity, for example. The game makes them think about what adjustments they have to make to build a successful city and enjoy popularity. Yet many of these games teach very little in the realm of real, practical, useful concepts. Accurate knowledge of how computers actually process data internally would be of much more tangible benefit.

And for casual home users, a game that involved them into the world of the IIGS toolbox and introduced them to the concepts of variables, memory locations, pointers and file handling could pique their interest enough to get them involved in programming. By surrounding the public with specific hardware details, a homemaker in Ohio with free time could be the one that writes the next major application for the Apple II.

In any case, if ordinary users confidently understood how their system worked, they'd feel more competent in trying to figure out how to get their II to do tasks for them using an environment like HyperTalk. A success in learning that could move them into C or assembly to accomplish more.

Learning the Basics

How many people do you know that could correctly assemble a SCSI chain without a manual? After playing a few games of "The SCSI Terminator," anyone would be ready. "Quick, buffer that electromagnetic burst! Throw in a terminator at the end of the chain!" a digitized voice would holler.

You look over your controls. Then you're faced with, "Captain, we've got to change SCSI ID's on some of these devices! We're getting conflicts!"

Have you dealt with Zip's hokey HyperStudio stack documentation to install their Zip GS accelerator? They'd be better off shipping the card with "Chip Chaser," where you pilot your card under the IIGS hood. "Establish contact with the power supply case to release the static field!" Oh no! You've blown out some major CMOS circuitry! That'll lower your score.

Now remove the old processor. You are warned, "Pry up gently; if you damage your original, you'll have major downtime if you ever need to send in your accelerator!" Now make contact with original docking bay using your processor socket cable.

Your panel is blinking red. "System failure. Check DIP switch settings on card and retry diagnostics." Now your cable isn't making contact. Good grief, it's as hard as an actual installation!

Making computer basics understood is one thing that games can teach. And the Apple II community would certainly benefit from more programmers, as well.

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